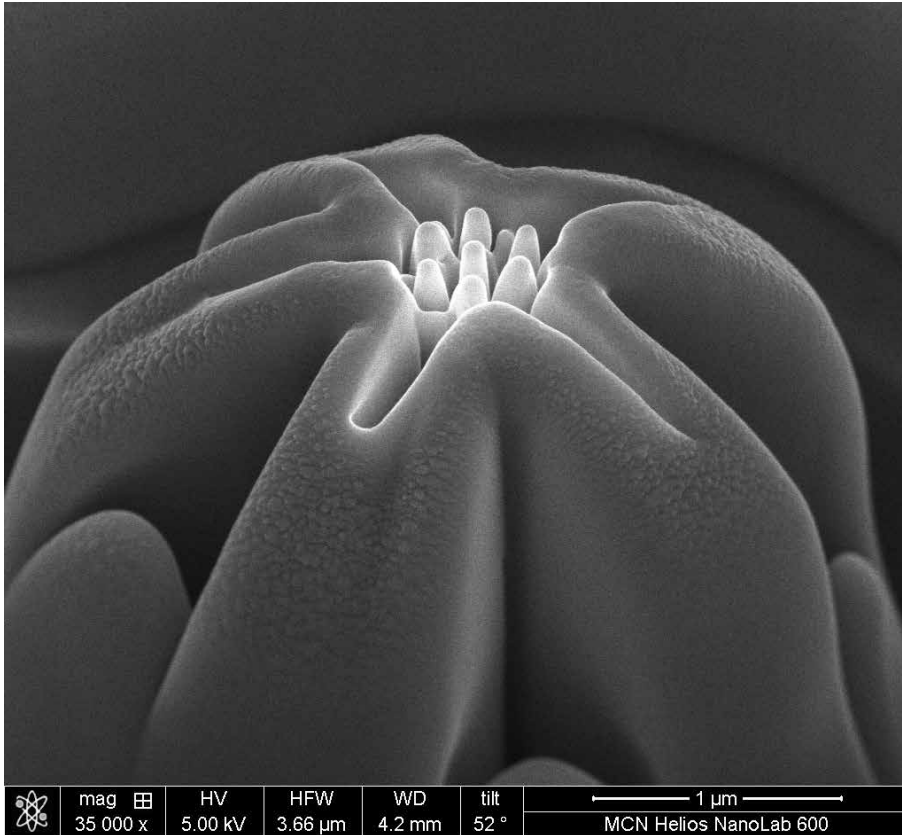




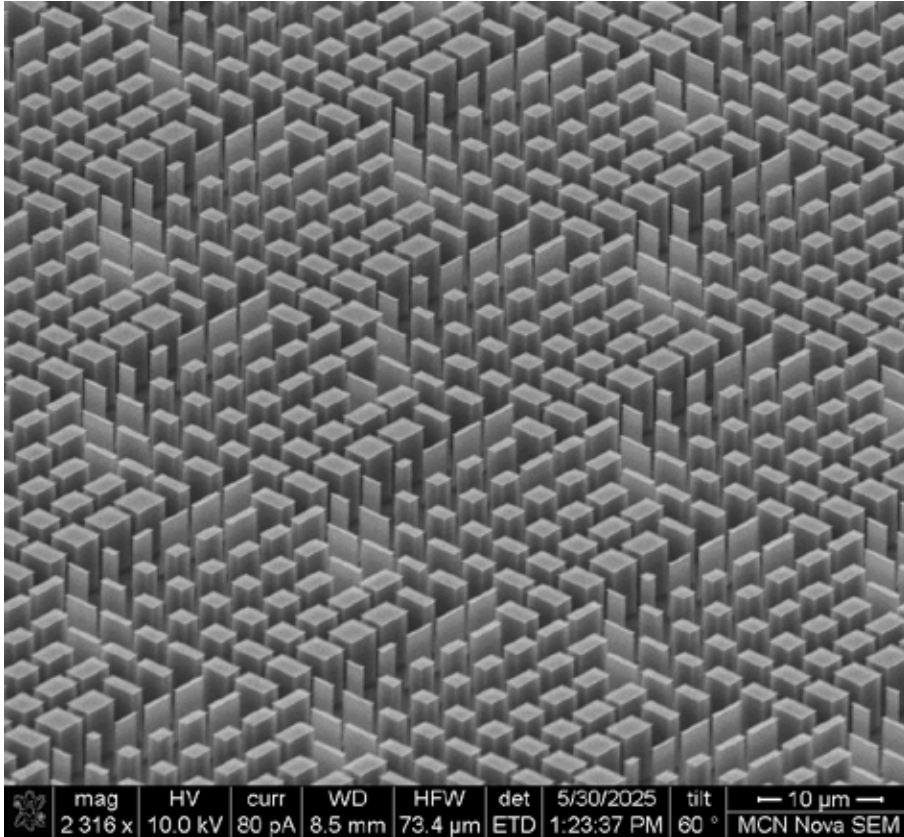
FINALIST ENTRY

Microwinkle flower

This periwinkle flower was carved out of silicon using focused ion beam milling.

Equipment used:

Helios FIB-SEM at Melbourne Centre for Nanofabrication (MCN)



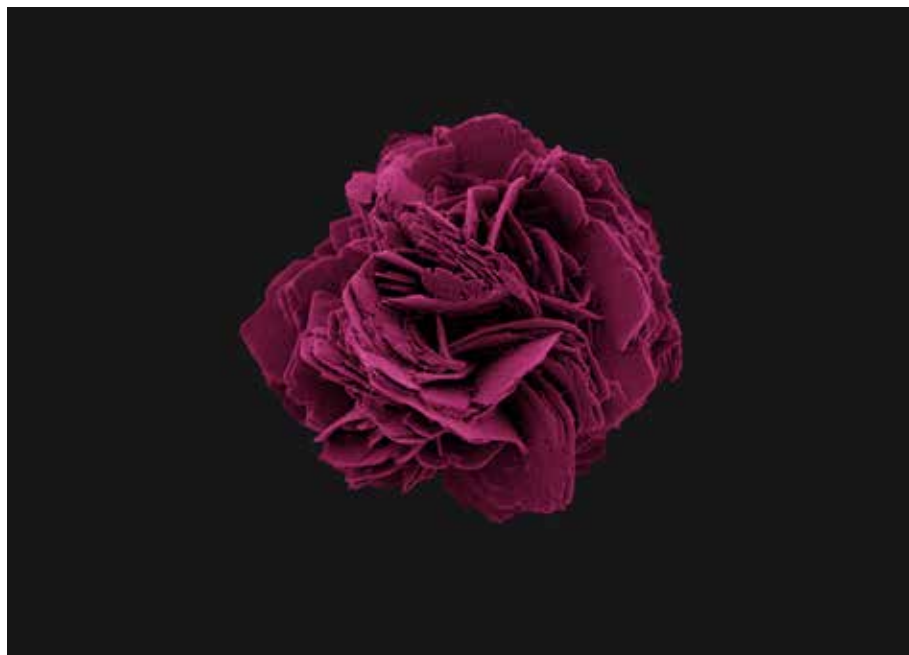
FINALIST ENTRY

Nanocity: a metasurface skyline

A tilted scanning electron micrograph of a mid-infrared metasurface, where nanoscale pillars form a miniature city-like landscape. Each structure is engineered to control infrared light, turning an optical device into an architectural world only micrometres across.

Equipment used:

EBL, E-beam evaporator, ICP-RIE and SEM at Melbourne Centre for Nanofabrication (MCN)



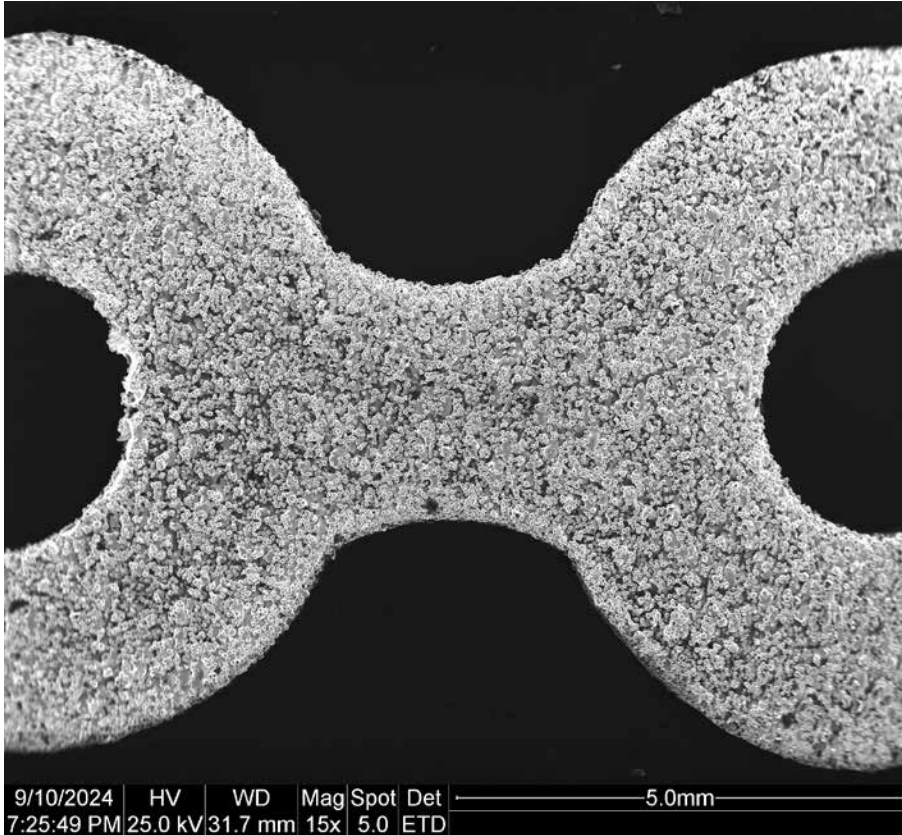
FINALIST ENTRY

Self-assembled nano-flower scaffold for mRNA delivery in mammalian systems

False-coloured SEM micrograph showing flower-like morphology of mRNA-loaded zeolitic imidazolate framework (ZIF) formed from zinc acetate and 2-methylimidazole. The 19-nt mRNA-loaded micron-sized biocomposite was iridium-coated and imaged at 3 kV using an in-lens secondary electron detector on a FEI Verios SEM.

Equipment used:

Materials prepared and imaged at RMIT's Micro Nano Research Facility (MNRF), a partner hub of ANFF-VIC



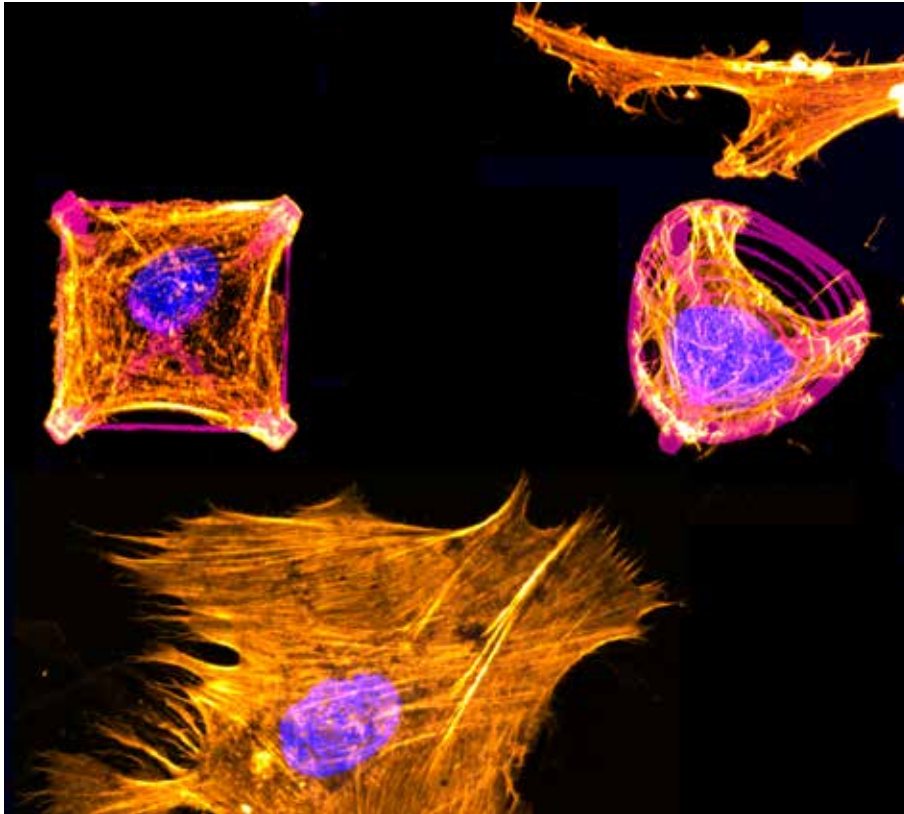
FINALIST ENTRY

Forged by light: a titanium bone plate shaped through additive manufacturing, where precision engineering meets sculptural form

Born from layers of molten metal, this titanium bone plate reveals the artistry of additive manufacturing. Its flowing geometry and textured surface echo both function and form—engineered for the human body, yet resembling a sculpted artefact that bridges medicine, design and advanced materials science.

Equipment used:

Seki 6500 Microwave-enhanced Diamond Deposition System at Melbourne Centre for Nanofabrication (MCN)



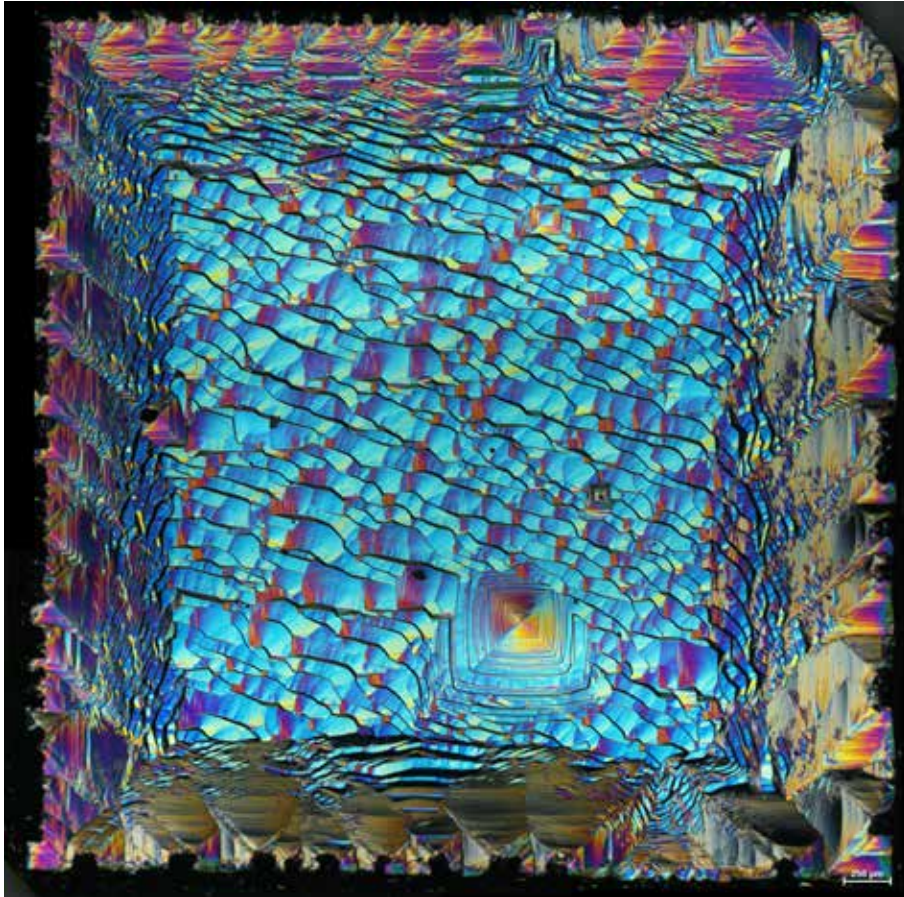
FINALIST ENTRY

Stem cells confined within two-photon polymerised micro-cages reveal geometry-driven cytoskeletal organisation

This image captures stem cells confined within 35 μm 3D micro-cages fabricated using direct laser writing via two-photon polymerisation. Precision-engineered square and circular nanowire architectures mechanically interface with cells at micro resolution. Fluorescence imaging reveals geometry-dependent cytoskeletal organisation, demonstrating the integration of advanced microfabrication with cellular mechanobiology.

Equipment used:

Nanoscribe GT2 and Stellaris Confocal Microscope at Melbourne Centre for Nanofabrication (MCN)



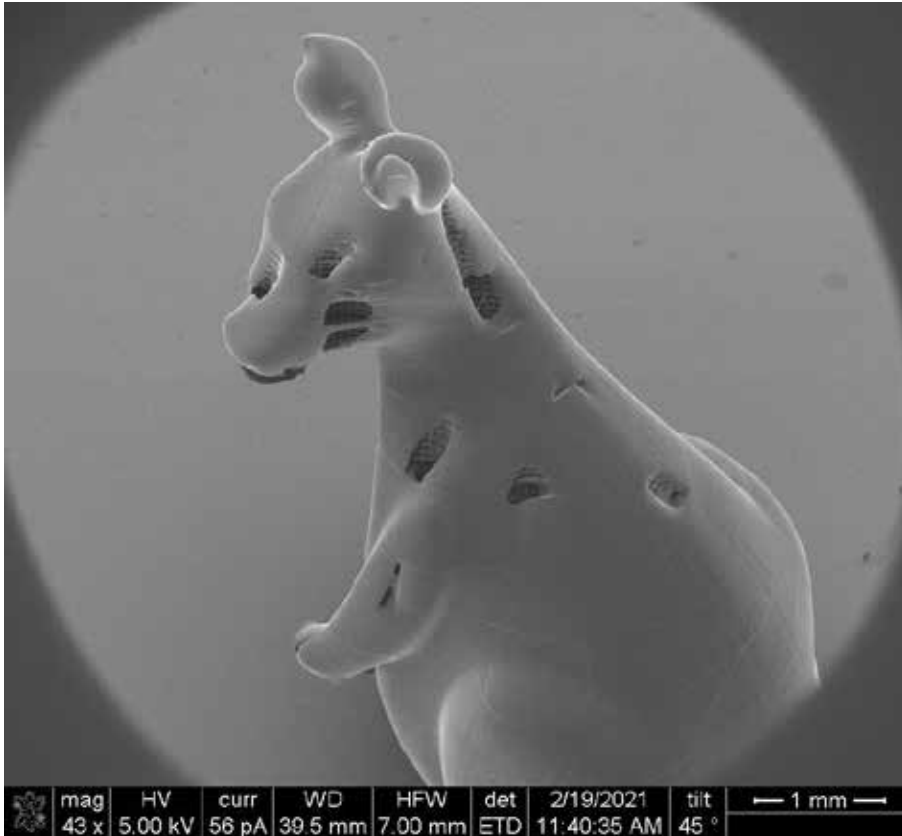
FINALIST ENTRY

Diamond waves

Optical image (Differential Interference Contrast) of a (100) diamond substrate with an electronic grade epilayer grown in the Seki 6500 CVD reactor at the MCN. The image is composed of 9 frames, stitched using ImageJ.

Equipment used:

Seki 6500 Microwave-enhanced Diamond Deposition System and Nikon Optical Microscope at Melbourne Centre for Nanofabrication (MCN)



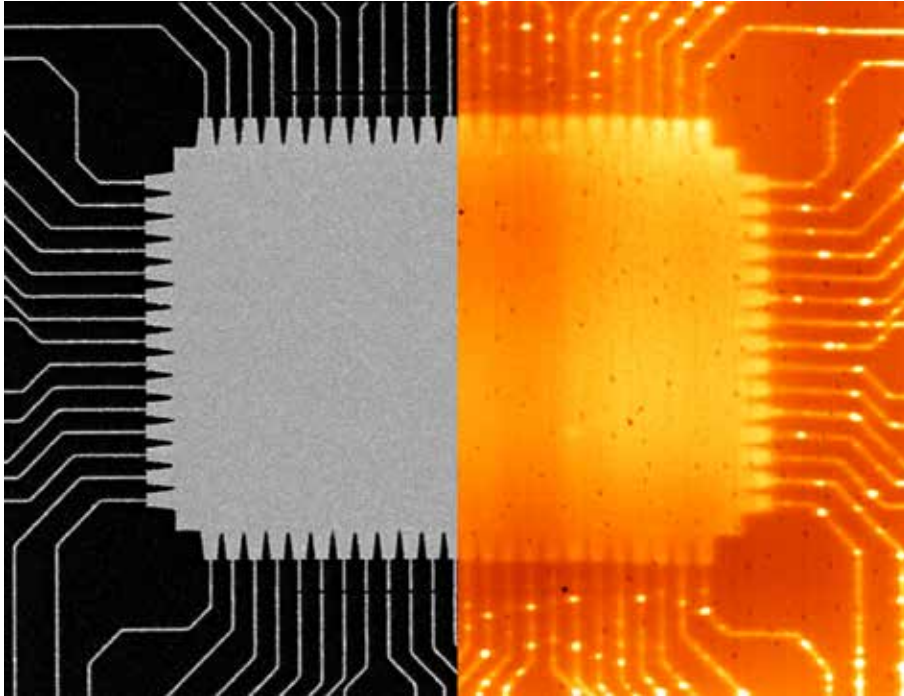
FINALIST ENTRY

Zombieroo captured in the microwild!

In a world-first event, a micro wildlife biologist was able to capture through her lens the first image of a zombieroo (micropus zombus). The microscopic zombie marsupial shown in this incredible shot appears to be a young female. Her advanced state of decomposition offers a glimpse into her internal organs. Fascinating!

Equipment used:

Nanoscribe GT2 and Nova FEG-SEM at Melbourne Centre for Nanofabrication (MCN)



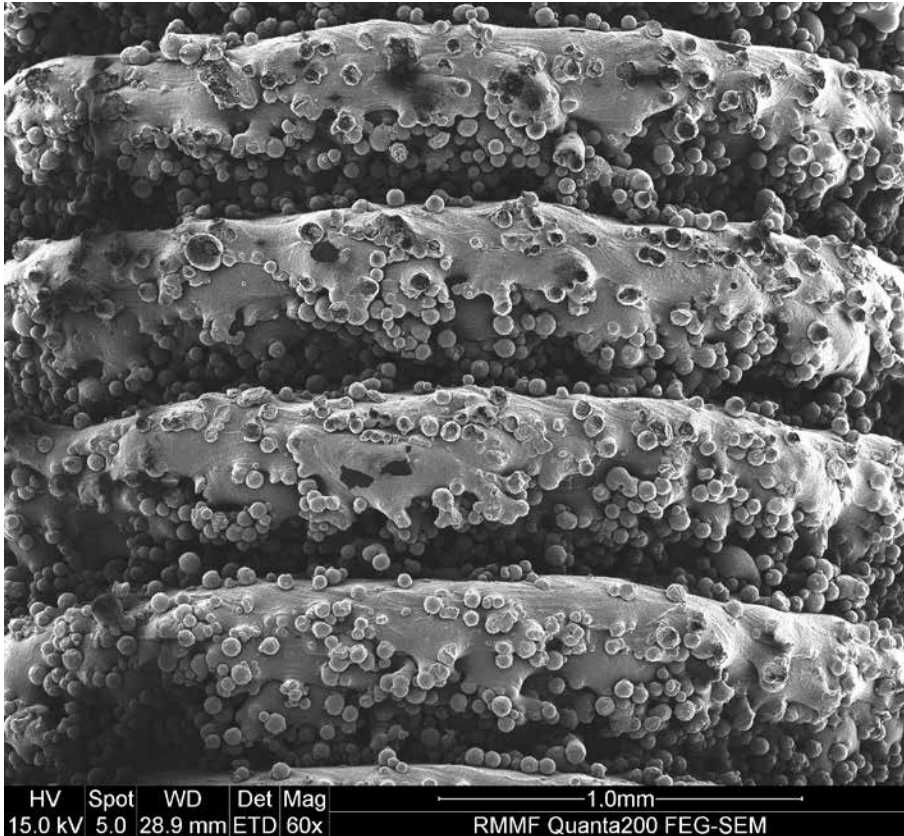
FINALIST ENTRY

Natural 2D material hyperlens for non-destructive nanoelectronic circuit imaging and inspection

Left: FIB-SEM image of a "CPU" pattern with Au traces (40 nm line width). The pattern was coated with an insulating SiO₂ layer before placing a 240 nm-thick alpha-MoO₃ flake. Right: Near-field image via s-SNOM on the top surface of alpha-MoO₃ flake covered on the buried "CPU" pattern. Here, alpha-MoO₃ flake acts as a flat hyperlens for super-resolution imaging.

Equipment used:

Helios FIB-SEM and Neaspec s-SNOM system at Melbourne Centre for Nanofabrication (MCN)



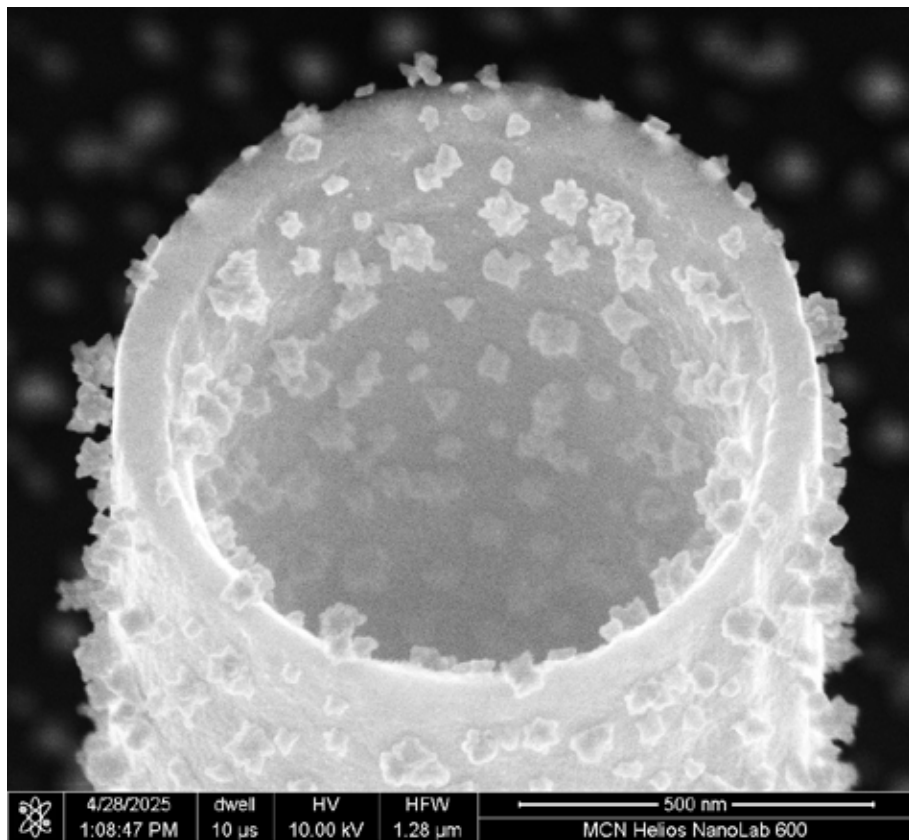
FINALIST ENTRY

Threads of brilliance: a titanium screw transformed by a shimmering diamond skin

A surgical screw reimaged at the microscale, where a diamond coating envelops each thread with a luminous texture. The interplay of light across the faceted surface reveals both precision engineering and natural beauty, merging function and form in a material designed for strength, durability and performance.

Equipment used:

Seki 6500 Microwave-enhanced Diamond Deposition System at Melbourne Centre for Nanofabrication (MCN)



FINALIST ENTRY

The black hole

This scanning electron micrograph shows a silicon nanotube decorated with gold nanostar nanoparticles. The localised nanoparticle coating creates optical “hot spots” that improve the delivery of biomolecules into living cells.

Equipment used:

Helios FIB-SEM at Melbourne Centre for Nanofabrication (MCN)